CLAIMS

1.   Rehabilitation apparatus, comprising:

at least one motion support element adapted to support a motion of a part of a human;

a generator of rhythmic audio; and

a controller configured to correlate an audio output of said generator and said supported motion.

2.   Apparatus according to claim 1, wherein said motion support element is adapted for attachment to a human.

3.   Apparatus according to claim 1, wherein said motion support element is adapted for gripping by a human.

4.   Apparatus according to any of claims 1-3, wherein said motion support element is adapted to assist a movement by a human.

5.   Apparatus according to claim 4, wherein said assisting comprises moving a portion of said human.

6.   Apparatus according to claim 4 or claim 5, wherein said assisting comprises following a motion of said human while providing at least part of a motive force.

7.   Apparatus according to any of claims 4-6, wherein said assisting comprises restricting a motion of said human.

8.   Apparatus according to any of claims 1-7, wherein said motion support element is adapted to resist a movement by a human.

9.   Apparatus according to claim 8, wherein said resistance is not spatially uniform.

10.   Apparatus according to any of claims 1-9, wherein said motion support element initiates said motion.

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11.   Apparatus according to claim 10, wherein said motion support element moves said human.

5   12.   Apparatus according to claim 10 or claim 11, wherein said motion support cues said human to start said motion.

13.   Apparatus according to any of claims 1-12, wherein said controller generates said audio responsive to a correctness of said motion.

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14.   Apparatus according to claim 13, wherein said controller modifies said audio during a motion according to a correctness of said motion.

15.   Apparatus according to claim 13 or claim 14, wherein said correctness is judged against
15   a stored plan.

16.   Apparatus according to any of claims 13-15, wherein said correctness is judged against one or more criteria.

20   17.   Apparatus according to any of claims 13-16, wherein said controller distorts said audio according to a degree of error of said motion.

18.   Apparatus according to any of claims 1-17, wherein said controller generates said audio to be timed to a desired movement by said human.

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19.   Apparatus according to claim 18, wherein said audio is generated before said movement.

20.   Apparatus according to claim 18, wherein said audio is generated in time with said
30   movement.

21.   Apparatus according to claim 18, wherein said audio is generated during said movement including an anticipation of changes in said movement according to a plan stored in said

controller.

22.   Apparatus according to any of claims 18-21, wherein said controller is configured to generate a score according to a synchronization between movements to specific spatial locations and said audio.

23.   Apparatus according to any of claims 18-22, wherein said controller is configured to mix a predetermined musical stream and audio generated according to said motion.

24.   Apparatus according to any of claims 18-23, wherein said controller comprises a memory that links musical elements with motion elements.

25.   Apparatus according to claim 24, wherein said controller generates said audio from musical elements corresponding to different body parts.

26.   Apparatus according to claim 24, wherein said controller generates said audio from musical elements corresponding to different motions.

27.   Apparatus according to any of claims 1-26, wherein said controller generates said audio according to a difference between a desired motion and an actual motion.

28.   Apparatus according to any of claims 1-27, comprising a sensor which generates an indication of said motion.

29.   Apparatus according to claim 28, wherein said controller generates a music stream according to said motion.

30.   Apparatus according to claim 29, wherein said controller generates said stream as a set of instructions prior to detecting motion of said human.

31.   Apparatus according to claim 30, wherein said controller generates series of musical notes and corresponding spatial motions.

32.   Apparatus according to any of claims 1-31, wherein said controller has stored therein a plurality of trajectories of motion of said human.

33.   Apparatus according to any of claims 1-31, wherein said controller has stored therein a rehabilitation program for said human.

34.   Apparatus according to any of claims 1-33, wherein said audio comprises music.

35.   Apparatus according to any of claims 1-34, wherein said audio generator is adapted to modify existing music.

36.   Apparatus according to any of claims 1-35, wherein said controller is adapted to detect a physiological indicator of said human and generate music responsive thereto.

37.   Rehabilitation apparatus comprising:

an audio generator;

at least one sensor adapted to sense a movement of a human;

a controller having stored therein rehabilitation information of a human,

wherein said controller is adapted to correlate said audio and said movement responsive to said rehabilitation information.

38.   Apparatus according to claim 37, wherein said apparatus is portable by an unassisted human.

39.   Apparatus according to claim 37, wherein said apparatus is wearable.

40.   Apparatus according to claim 37, wherein said apparatus comprises a stable base and at least one moving extension.

41.   A method of rehabilitation, comprising:

coupling a patient to a rehabilitation system;

performing a rehabilitation activity by said patient; and

automatically generating music correlated with said rehabilitation activity.

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42.   A method according to claim 41, wherein automatically generating comprises providing at least one cue to said patient.

5   43.   A method according to claim 41, wherein automatically generating comprises providing at least one musical instruction to said patient.

44.   A method according to claim 41, wherein automatically generating comprises providing feedback on a physical action using music.

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45.   A method according to claim 41, wherein automatically generating comprises providing said music to other rehabilitated patients.

46.   A method according to claim 41, comprising selecting music for a cognitively impaired

15   patient.

47.   A method according to any of claims 41-46, wherein automatically generating comprises generating music according to a correctness of motion.

20   48.   A method according to any of claims 41-47, wherein automatically generating comprises generating music timed according to a desired motion.

49.   A method according to claim 48, wherein automatically generating comprises requiring said patient to reach spatial locations according to a musical feature of said music.

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50.   A method according to claim 48, wherein automatically generating comprises generating a musical channel to overlay an existing musical channel according to a motion of said patient.

30   51.   A method according to any of claims 41-50, wherein automatically generating music comprises generating music to synchronize motions of different points in a body of said patient.

52.   A method according to any of claims 41-50, wherein automatically generating music

comprises said patient bringing music to said system.